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PUC DOCKET NO. 48785

**DIRECT TESTIMONY
OF WILSON P. PEPPARD, WITNESS FOR
ONCOR ELECTRIC DELIVERY COMPANY LLC AND AEP TEXAS INC**

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1 **DIRECT TESTIMONY OF WILSON P. PEPPARD**

2 **I. POSITION AND QUALIFICATIONS**

3 Q. PLEASE STATE YOUR NAME AND ADDRESS:

4 A. My name is Wilson P. Peppard. I am employed by Oncor Electric Delivery
5 Company LLC ("Oncor"). I hold the position of Transmission Manager III –
6 Line Design and Engineering Services. My business address is 115 West
7 7th Street, Fort Worth, Texas 76102.

8 Q. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS.

9 A. I received a Bachelor's of Science degree in Civil Engineering, with a
10 specialization in Construction Engineering Management, from Texas A&M
11 University in 2009. Since then I have been employed by Oncor as an
12 engineer focused on the design, construction, and operation of
13 transmission lines. I am a registered Professional Engineer in the State of
14 Texas (License # 115954). I also received a Master's in Business
15 Administration degree in 2013. My educational and professional
16 qualifications are more fully presented in my resume attached hereto as
17 Exhibit WPP-1.

18 Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE
19 PUBLIC UTILITY COMMISSION OF TEXAS ("COMMISSION")?

20 A. Yes, I presented pre-filed and live testimony in Commission Docket No.
21 47368.

22 **II. PURPOSE OF TESTIMONY**

23 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

24 A. The purpose of my testimony is to introduce, support, sponsor, and
25 describe the project schedule, financing, and cost estimates involved with
26 the proposed routes filed with the Application for a Certificate of
27 Convenience and Necessity for a Proposed Transmission Line
28 ("Application") submitted by Oncor and AEP Texas Inc. ("AEP Texas", and
29 together with Oncor, "Applicants") in this docket. My testimony will also
30 introduce, support, sponsor, and describe the structures selected and

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1 known engineering constraints involved in the various routes filed with the
2 Application. I sponsor or co-sponsor Applicants' responses to Question
3 Nos. 1-13 and 20 as well as Attachment Nos. 2-3 to the Application. The
4 facts and statements set forth in the portions of the Application that I
5 sponsor are true and correct. The Application, as may be amended
6 and/or supplemented, will be offered into evidence by Applicants at the
7 hearing on the merits.

8 **III. DESCRIPTION OF PROPOSED TRANSMISSION LINE PROJECT**

9 Q. PLEASE DESCRIBE THE PROPOSED TRANSMISSION LINE
10 PROJECT.

11 A. The proposed Sand Lake – Solstice 345 kV transmission line project
12 (“Proposed Transmission Line Project”) consists of constructing a new
13 transmission line on double-circuit 345 kV structures, with both circuits
14 initially in place, extending from Oncor’s Sand Lake Switch station in Ward
15 County to AEP Texas’ Solstice Switch station in Pecos County. All filed
16 routes are proposed to be constructed using steel lattice towers capable of
17 supporting two 345 kV circuits.

18 Oncor and AEP Texas’ typical lattice structures are shown in
19 Figures 1-2 & 1-3 of the *Environmental Assessment and Alternative Route*
20 *Analysis for Oncor Electric Delivery Company LLC’s and AEP Texas Inc.’s*
21 *Proposed Sand Lake – Solstice 345 kV Transmission Line Project in*
22 *Pecos, Reeves, and Ward Counties, Texas* (“Environmental Assessment
23 and Routing Study”) included as Application Attachment No. 1.

24 The 345 kV circuits used by Oncor will be installed using 1926.9
25 kcmil ACSS/TW (Aluminum Conductor Steel Supported, Trapezoidal-
26 shaped Wire) conductors. The normal peak operating current rating for
27 this twin-bundled conductor is approximately 5,138 amperes. AEP
28 witness Mr. Tom Reynolds discusses the conductor characteristics used
29 on its portion of the Proposed Transmission Line Project in his direct
30 testimony.

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1 The Proposed Transmission Line Project will be designed and
2 constructed to meet or exceed the specifications and/or criteria set forth in
3 the appropriate edition of the National Electrical Safety Code, the statutes
4 of the State of Texas, the Commission's Rules, and Oncor's standard
5 design practices.

6 Q. WILL NEW RIGHT-OF-WAY BE REQUIRED FOR THE PROPOSED
7 TRANSMISSION LINE PROJECT?

8 A. Yes. The Proposed Transmission Line Project will require a typical right-
9 of-way ("ROW") width of approximately 160 feet. The centerline of the
10 Proposed Transmission Line Project will be located in approximately the
11 center of the ROW. Applicants currently have not acquired any of the
12 ROW for this project.

13 Q. HOW WILL RESPONSIBILITY FOR AND OWNERSHIP OF THE
14 PROPOSED TRANSMISSION LINE PROJECT BE DIVIDED BETWEEN
15 ONCOR AND AEP TEXAS?

16 A. Consistent with the letter agreement between the Applicants (Attachment
17 No. 2 to the Application), Oncor and AEP Texas will determine an
18 appropriate location to divide ownership of the project at or near the
19 midpoint of the approved route. For example, if the Commission approves
20 the Proposed Transmission Line Project along Route 320, which
21 Applicants selected as the route best meeting the applicable guidelines in
22 PURA and the Commission's rules, without modification, then ownership
23 would be divided at the node of Links G4 and G51. AEP Texas would
24 own that structure and the portion of the project progressing towards
25 Solstice Switch, and Oncor would own that portion of the project
26 progressing towards Sand Lake Switch.

27 Q. WILL STATION CONSTRUCTION BE REQUIRED IN CONNECTION
28 WITH THE PROPOSED TRANSMISSION LINE PROJECT?

29 A. Yes. Expansion of both Sand Lake and Solstice Switch stations will be
30 required, including work necessary to terminate the Proposed

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1 Transmission Line Project at both ends of the line. Improvements at Sand
2 Lake Switch may include station dead-end structures, bus work,
3 transformers, grading, fencing, and other equipment and structures.
4 Applicants have acquired the necessary property rights to expand these
5 station end-points. AEP Texas witness Mr. Reynolds discusses details
6 relating to the necessary work at Solstice Switch in his direct testimony.

7 **IV. PROJECT SCHEDULE AND FINANCING**

8 Q. WHAT IS ONCOR'S PROPOSED SCHEDULE FOR THE PROPOSED
9 TRANSMISSION LINE PROJECT?

10 A. ROW acquisition is anticipated to begin as early as May 2019, assuming
11 Commission approval, though one or both Applicants may begin ROW
12 discussions with landowners before that time. Construction of Oncor's
13 portion of the Proposed Transmission Line Project is anticipated to begin
14 around April 2020. In coordination with AEP Texas, the timeframe for
15 energizing the Proposed Transmission Line Project is projected to be
16 December 2020. Further details on this schedule are contained in the
17 CCN application, and AEP Texas witness Mr. Reynolds discusses AEP's
18 proposed project schedule.

19 Q. HOW WILL ONCOR FINANCE ITS PORTION OF THE PROPOSED
20 TRANSMISSION LINE PROJECT?

21 A. Oncor proposes to finance its portion of the facilities included in the
22 Proposed Transmission Line Project with a combination of debt and equity
23 in compliance with its authorized capital structure, which is similar to the
24 means used for previous construction projects. Oncor plans to utilize
25 internally generated funds and proceeds received from the issuance of
26 securities. Oncor will typically obtain short-term borrowings as needed for
27 interim financing of their construction expenditures in excess of funds
28 generated internally. These borrowings are then repaid through the
29 issuance of long-term debt securities, the types and amounts of which are
30 as of yet undetermined. AEP Texas witness Mr. Reynolds discusses the

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1 financing of its portion of the Proposed Transmission Line Project in his
2 direct testimony.

3 **V. STRUCTURE SELECTION**

4 Q. WHAT STRUCTURES DID ONCOR SELECT FOR CONSTRUCTION OF
5 ITS PORTION OF THE PROPOSED TRANSMISSION LINE PROJECT?

6 A. Oncor's current standard for new double-circuit 345 kV construction is
7 steel lattice towers. After evaluating numerous factors relating to the
8 study area, including but not limited to span length between structures,
9 construction and maintenance issues, cost, and impacts to affected
10 landowners, Oncor affirmed the use of this standard for the Proposed
11 Transmission Line Project. The Environmental Assessment and Routing
12 Study further details these factors and includes the typical structure
13 drawings I previously referenced. AEP Texas witness Mr. Reynolds
14 discusses AEP Texas' structure selection in his direct testimony.

15 **VI. NEIGHBORING UTILITIES AND POLITICAL SUBDIVISIONS**

16 Q. ARE ANY OTHER ELECTRIC UTILITIES INVOLVED WITH THE
17 PROPOSED TRANSMISSION LINE PROJECT?

18 A. Applicants are the only electric utilities involved in the Proposed
19 Transmission Line Project. AEP Texas and Lower Colorado River
20 Authority Transmission Services Corporation ("LCRA TSC") are
21 concurrently developing and seeking CCN approval for a separate but
22 related project, called the Bakersfield – Solstice 345 kV transmission line,
23 which shares a common end-point at Solstice Switch.

24 Q. PLEASE IDENTIFY THE POLITICAL SUBDIVISIONS IN WHICH THE
25 PROPOSED TRANSMISSION LINE PROJECT MAY BE LOCATED.

26 A. The routes filed for the Proposed Transmission Line Project are all located
27 within Pecos, Reeves, and Ward Counties. While the study area includes
28 the Cities of Barstow and Pecos, none of the alternative routes proposed
29 for construction are located within the territorial or extra-territorial limits of
30 these municipalities, as further detailed in the Application.

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1 **VII. COST ESTIMATES**

2 Q. WHAT ARE THE ESTIMATED COSTS OF THE TRANSMISSION LINE
3 WORK FOR EACH ROUTE FILED FOR THE PROPOSED
4 TRANSMISSION LINE PROJECT?

5 A. In consultation with AEP Texas, I estimate that for double-circuit 345 kV
6 transmission line construction along Recommended Route 320 (as
7 discussed in the direct testimony of Applicants' witness Ms. Brenda J.
8 Perkins) using steel lattice tower structures, transmission line costs would
9 be approximately \$98,220,000, excluding station costs. The estimated
10 costs of all 29 alternative routes, excluding station costs, range from
11 approximately \$98,220,000 to \$126,903,000.

12 Q. WHAT ARE THE ESTIMATED COSTS OF THE STATION FACILITIES
13 ASSOCIATED WITH THE PROPOSED TRANSMISSION LINE
14 PROJECT?

15 A. There are approximately \$17.6 million in costs associated with the
16 switching station facilities to be constructed for the expansions necessary
17 at Sand Lake, including a 345/138 kV autotransformer. There are
18 approximately \$10.1 million in AEP-estimated costs associated with the
19 switching station facilities to be constructed for the expansions necessary
20 at Solstice, which I was provided. The estimate for additions at AEP
21 Texas' Solstice Switch includes upgrades to interconnect the transmission
22 line from Sand Lake proposed in this case, and does not include
23 ~~substation~~ Solstice Switch costs associated with the AEP Texas/LCRA
24 TSC line from Bakersfield Station to Solstice Switch that are separately
25 addressed in Commission Docket No. 48787. Each of these station cost
26 estimates accounts for the construction of the expanded switching stations
27 and the structures, yards, equipment, and other items necessary to
28 accommodate the Proposed Transmission Line Project.

1 Q. PLEASE EXPLAIN THE PRIMARY REASONS FOR VARIATION IN
2 TRANSMISSION LINE COST ESTIMATES BETWEEN THE VARIOUS
3 ALTERNATIVE ROUTES FILED WITH THE APPLICATION.

4 A. The primary driver of the variation in transmission line costs is the varied
5 lengths of the proposed routes. Longer lines may result in higher costs
6 due to increased need for engineering and design, increased procurement
7 of necessary materials and equipment, and construction activities
8 requiring more time and labor. Using angle structures also increases the
9 cost of the line; generally, the larger the angle, the greater the cost
10 associated with it. Each of these variables and others contribute to the
11 estimated cost for each transmission line route.

12 Q. HAVE YOU COMMUNICATED WITH OTHERS REGARDING THESE
13 COST ESTIMATES?

14 A. Yes. I communicated with AEP Texas personnel regarding cost
15 estimates, including those relating to Solstice Switch. A copy of the
16 summarized cost estimates for each alternative route was also provided to
17 Ms. Perkins. A copy of the summarized cost estimates is included as
18 Application Attachment No. 3.

19 **VIII. PROJECT PERMITTING**

20 Q. WILL ANY PERMITS BE REQUIRED FOR THE PROPOSED
21 TRANSMISSION LINE PROJECT IN ADDITION TO THE CCN SOUGHT
22 IN THIS PROCEEDING?

23 A. Yes, assuming the Application is approved by the Commission, it is likely
24 that additional permits will be necessary to construct the Proposed
25 Transmission Line Project. Following approval, and prior to construction,
26 Oncor will acquire all necessary permits/approvals and make all required
27 notifications. For example, it is currently anticipated that a Texas
28 Department of Transportation permit will be required for crossing state-
29 maintained roadways. A Storm Water Pollution Prevention Plan will be
30 prepared and a Notice of Intent will be submitted to the Texas

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1 Commission on Environmental Quality under the Texas Pollutant
2 Discharge Elimination System program. A cultural resources survey plan
3 will be developed with the Texas Historical Commission for the approved
4 project. Consultation with the U.S. Army Corps of Engineers will occur
5 following Commission approval of the Application to determine appropriate
6 permit requirements, including under Section 404 of the Clean Water Act.
7 Consultation with the U.S. Fish and Wildlife Service will occur following
8 Commission approval of the Application to determine appropriate
9 requirements under the Endangered Species Act, if necessary. AEP
10 witness Mr. Reynolds further discusses project permitting in his direct
11 testimony.

12 **IX. ENGINEERING CONSTRAINTS**

13 Q. WHAT ARE SOME EXAMPLES OF ENGINEERING CONSTRAINTS?

14 A. Examples of engineering constraints may include, but are not limited to:
15 oil, gas, or water wells; pipelines or pipeline ROW; highway crossings;
16 uneven or unstable terrain; unfavorable soil conditions; or bodies of water.

17 Q. ARE THERE ANY KNOWN ENGINEERING CONSTRAINTS
18 ASSOCIATED WITH THE PROPOSED ROUTES FOR THE PROPOSED
19 TRANSMISSION LINE PROJECT?

20 A. Based on the information available to Applicants at this time, none of the
21 filed alternative routes present any known engineering constraints that
22 cannot be resolved with additional consideration by Applicants during the
23 design and construction phase following approval of this Proposed
24 Transmission Line Project. However, Applicants do not have access to
25 private property to conduct on-the-ground surveys at this time. There may
26 exist unknown engineering constraints that would require further
27 adjustments if discovered. I communicated this fact to Ms. Perkins.

28 Q. DOES THE STUDY AREA FOR THE PROPOSED TRANSMISSION LINE
29 PROJECT MERIT ADDITIONAL FLEXIBILITY REGARDING POTENTIAL
30 ENGINEERING CONSTRAINTS?

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1 A. Yes, I believe so. Assuming Commission approval, the Proposed
2 Transmission Line Project will be constructed in areas of West Texas
3 where rapid oil and gas development and related activity is occurring. In
4 recent construction activity in this area, Oncor has repeatedly encountered
5 new development—such as new pipelines, pad sites, sand mining
6 operations, frac ponds, and similar types of development—springing up in
7 the short period of time between project commencement (whether
8 following Commission approval or commencement of an exempt project)
9 and property acquisition. This rapid pace of development far exceeds the
10 speed of the CCN regulatory process, potentially rendering Applicants'
11 ability to construct the Proposed Transmission Line Project on the
12 Commission-approved route much more difficult. These potential
13 impediments are especially concerning given ERCOT's critical designation
14 for this project, as Applicants' witness Mr. Brent R. Kawakami discusses in
15 more detail in his direct testimony.

16 For these reasons, Applicants respectfully request the ability to
17 modify the approved route to the minimal extent necessary to avoid
18 engineering constraints encountered in the field during the design and
19 construction phase of the Proposed Transmission Line Project, consistent
20 with the Commission's order approving this project and good utility
21 practice.

22 **IX. CONCLUSION**

23 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

24 A. Yes, it does.

AFFIDAVIT

STATE OF TEXAS §
 §
COUNTY OF TARRANT §

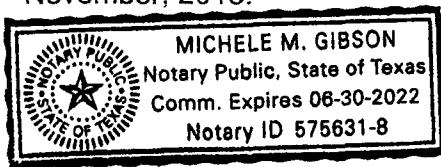
BEFORE ME, the undersigned authority, on this day personally appeared Wilson P. Peppard who, having been placed under oath by me, did depose as follows:

My name is Wilson P. Peppard. I am of legal age and a resident of the State of Texas. The foregoing testimony and exhibit offered by me are true and correct, and the opinions stated therein are, to the best of my knowledge and belief, accurate, true and correct.



Wilson P. Peppard

SUBSCRIBED AND SWORN TO BEFORE ME on this 5th day of November, 2018.





Notary Public, State of Texas

My Commission Expires

08-30-2022

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**Oncor & AEP Texas
Sand Lake – Solstice CCN**

Work Experience

Oncor Electric Delivery – 2009 - Present

Transmission Manager II – Line Design & Engineering Services, Transmission Engineering, 2016 - Present

- Oversight of engineering services (drafting) group
- Retained all duties from Transmission Manager I role below

Transmission Manager I – Line Design, Transmission Engineering, 2013 - 2016

- Oversee design of transmission line projects for internal employees to ensure projects are completed on time and on budget
- Responsible for development and technical training of new employees
- Coordinate training programs with vendors for the department
- Develop standards and update processes with engineers to improve department
- Provide engineering decisions and interface with other internal and external organizations pertaining to Oncor transmission line assets
- Expert witness services for CREZ condemnation appeals
- Project support and issue resolution for experienced engineers within TE

Metro West Region Engineer, Transmission Operations, 2012 - 2013

District Support

- Lead unique projects to solve various right-of-way and engineering issues
- Assist transmission districts with engineering concerns associated with the existing system
- Build technical knowledge of operations functions including relaying, equipment diagnostics, line/station patrols, underground transmission lines, and new equipment commissioning
- Cultivate network of contacts within transmission districts

Initiatives Support

- Develop strategic plans that meet the dynamic pressures on Transmission Operations by analyzing large amounts of data
- Construct concise presentations to effectively communicate strategic plans, performance history, and new initiatives to executives

Transmission Line Design Engineer, CREZ Transmission Line Design Group, 2009 - 2012

CREZ Project Lead

- Project manager that leads teams of 12-16 CREZ project stakeholders on 2 projects to ensure issues are resolved resulting in on-time completion of projects
- Guide new Project Leads in developing their knowledge of transmission line project processes
- Conduct bi-weekly project meetings attended by project stakeholders, managers, and vendors to solve project issues
- Develop weekly tracking reports that: report project status, identify project concerns, assess risk to company, develop correction plans, and monitor resolutions. These reports are communicated through various company levels up to VP

Transmission Line Engineer

- Manage engineers in design of out-sourced portions of CREZ projects
- Develop project scopes, estimates, track changes, and communicate to various financial stakeholders
- Complete engineering designs of transmission lines where tasks include: analyzing cost, following detailed processes, and ensuring designs meet National Electric and Oncor Safety Codes
- Create engineering standards for multiple steel pole families and hardware assemblies
- Develop resource-leveling plans to re-assign various vendors on CREZ projects in order to mitigate risk of missing deadlines

- Expert engineering witness during land acquisition process for multiple condemnation and appeals cases
- Participate in Regulatory CCN process by providing engineering support on route feasibility, cost estimates, and representing Oncor at public outreach meetings
- Resource Engineer: 4 Projects, 160 miles, \$230 million
- Design Engineer: Significant projects include 2 "green-field" lines, 50 miles, \$80 million; Numerous other tower and pole relocation projects completed

Discipline Engineer

- Supervised transmission line connector "Root Cause Analysis Study" that included leading a teams of 6 engineers in identifying material that did not meet specifications, developed and coordinated parameters for material testing at a laboratory, created contingency plans for future issues, and communicated a new plan for Oncor's future use of this type of material
- Coordinate with other engineers to forecast material to alliance vendors for future budget years
- Participate in Strategic Sourcing process for OPGW (Fiber Optic Ground Wire) to create commodity-indexed based contracts with multiple suppliers
- Develop new engineering standards to reduce the number of item types purchased on CREZ projects in order reduce cost and increase material versatility

Memberships/Accomplishments:

Registered Professional Engineer – 2013 – Present

State of Texas

APEX Employee Development Program - 2012 – 2013

Program designed to develop leadership qualities and provide visibility within Oncor for it members. Participants gain experience by creating efficient, turn-key solutions that include multiple layers of analysis, submission of recommendations and, upon project approval, business and project plans for implementation

American Society of Civil Engineers

Member – 2004-2005, 2007-Present

Education

Texas A&M University, Dwight Look College of Engineering

B.S. Civil Engineering, Specialization: Construction Engineering Management, May 2009

Texas Christian University, Neeley School of Business

Masters of Business Administration, December 2013